Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) An isolated mutein of the bilin-binding protein of Pieris *brassicae*, wherein said mutein

(a) is able to bind digoxigenin or digoxigenin conjugates,

(b) does not bind ouabain, testosterone and 4-aminofluorescein

and,

(c) has an amino substitution at one or more of the sequence positions 28, 31, 34, 35, 36, 37, 58, 60, 69, 88, 90, 95, 97, 114, 116, 125, and 127 of the wild type bilin binding protein (SEQ ID NO: 28).

2. (Prevously Presented) The mutein according to claim 1, wherein a complex formed between the mutein of the bilin binding protein and digoxigenin has a dissociation constant of 100 nM or less.

3. (Previously Presented) The mutein according to claim 1, carries, in comparison with the wild type bilin-binding protein (SEQ ID NO: 28), at least one of the amino acid substitutions selected from the group consisting of Glu(28)- > Gln, Lys(3 I)- > Ala, Asn(34)- > Asp, Ser(35)- > His, Val(36)- > Ile, Glu(37)- > Thr, Asn(58)- > Arg, His(60)- > Ser, Ile(69)- > Ser, Leu(88)-> Tyr, Tyr(90)-> Ile, Lys(95)-> Gln, Asn(97)-> Gly, Tyr(114)-> Phe, Lys(116)-> Ser, Gln(1 25)- >Met, and Phe(127)-> Leu.

4. (Previously Amended) The mutein according to claim 3, wherein said mutein has the amino acid sequence depicted as SEQ ID NO: 23.

5. (Currently Amended) The mutein of claim 1, wherein said mutein carries at least one label group, selected from the group consisting of enzymatic label, radioactive label, fluorescent label, chromophoric label, luminescent label, ~~and~~ label

containing haptens, biotin, metal complexes, metals, ~~or~~ and colloidal gold.

6. (Previously Presented) A fusion protein comprising the mutein of claim 1, wherein a fusion partner of said fusion protein is at least one member selected from the group consisting of an enzyme, a protein, a protein domain, a signal sequence and an affinity peptide and wherein the fusion partner is fused to the amino terminus of the mutein.

7. (Previously Presented) A fusion protein comprising the mutein of claim 1, wherein a fusion partner of said fusion protein is at least one member selected from the group consisting of an enzyme, a protein, a protein domain, a targeting sequence and an affinity peptide, wherein said targeting sequence allows the transport of the fusion protein into a specific cell, and wherein the fusion partner is fused to the carboxy terminus of the mutein.

8. (Withdrawn) A nucleic acid, characterized in that it comprises a sequence coding for a mutein or a fusion protein of a mutein of the bilin-binding protein according to claim 1.

9. (Withdrawn) The nucleic acid according to claim 8, characterized in that it comprises the nucleotide sequence according to SEQ ID NO:15 or another nucleotide encoding the polypeptide according to SEQ ID NO:15.

10. (Withdrawn) A method for producing digoxigenin-binding muteins of the bilin-binding protein, which comprises the following steps:

(a) subjecting the bilin-binding protein to random mutagenesis at at least one of the sequence positions 28, 31, 34, 35, 36, 37, 58, 60, 69, 88, 90, 95, 97, 114, 116, 125, and 127,

(b) enriching resulting muteins with binding affinity for the digoxigenin group by selection and isolating said muteins,

(c) subjecting the muteins obtained in step (b) to another random mutagenesis at at least one of the sequence positions 28, 31, 34, 35, 36, and 37, and

(d) again enriching the resulting muteins by selection and isolating of said muteins.

11. (Withdrawn) The method according to claim 10, wherein in step (b) selection is

carried out by competitive enrichment.

12. (Withdrawn) The method according to claim 11, wherein free digoxigenin is used for competitive enrichment.

13. (Withdrawn) The method according to claim 10, wherein the enrichment of step (d) is carried out by forming a complex of the muteins with the digoxigenin group and subsequently dissociating the complex.

14. (Withdrawn) The method according to claim 13, wherein the dissociation of the complex of mutein and digoxigenin group is carried out in acidic or basic medium.

15. (Withdrawn) A method for preparing a mutein of the bilin-binding protein of Pieris *brassicae*, said method comprising

(a) subjecting a nucleic acid coding for a wild type bilin-binding protein (SEQ ID NO: 28) to random mutagenesis at one or more of the sequence positions 28, 31, 34, 35, 36, 37, 58, 60, 69, 88, 90, 95, 97, 114, 116, 125, and 127 of the wild type bilin binding protein (SEQ ID NO: 28), thereby obtaining a nucleic acid coding for a mutein of the bilin-binding protein,

(b) enriching resulting mutein with binding affinity for the digoxigenin group by selection and isolating said muteins,

(c) subjecting the muteins obtained in step (b) to another random mutagenesis at one or more of the sequence positions, 28, 31, 34, 35, 36, and 37, and,

(d) again enriching the resulting muteins by selection and isolating said muteins,

characterized in that the nucleic acid coding for the mutein of the bilin-binding protein is expressed in a bacterial or eukaryotic host cell and the polypeptide is obtained from the cell or the culture supernatant.

16. (Withdrawn) The use of mutein or a fusion protein of a mutein of the bilin-binding protein protein according to one or more of claims 1 to 7 of a mutein which is obtainable according to a method according to one or more of claims 10 to 14 for binding, detecting, determining, immobilizing, or removing digoxigenin or conjugates of

digoxigenin with proteins, nucleic acids, carbohydrates, other biological or synthetic macromolecules or low molecular weight chemical compounds.

17. (Withdrawn) A method for detecting the digoxigenin group, wherein a mutein of the bilin-binding protein or a fusion protein of a mutein of the bilin-binding protein according to claim 1 or a mutein which is obtainable according to a method which is obtainable by:

(a) subjecting the bilin-binding protein to random mutagenesis at at least one of the sequence positions 28, 31, 34, 35, 36, 37, 58, 60, 69, 88, 90, 95, 97, 114, 116, 125, and 127,

(b) enriching resulting muteins with binding affinity for the digoxigenin group by selection and isolating said muteins,

(c) subjecting the muteins obtained in step (b) to another random mutagenesis at at least one of the sequence positions, 28, 31, 34, 35, 36, and 37, and

(d) again enriching the resulting muteins by selection and isolating said muteins,

which is brought into contact with digoxigenin or with conjugates of digoxigenin under conditions suitable for effecting binding of the mutein to the digoxigenin group, and the mutein or the fusion protein of the mutein is determined.

18. (Previously Presented) The fusion protein according to claim 6, further comprising a second fusion partner that is at least one member selected from the group consisting of an enzyme, a protein, a protein domain, a targeting sequence which allows the transport of the fusion protein in a specific cell compartment and an affinity peptide and wherein this second fusion partner is fused to the carboxy terminus of the mutein.

19. (Previously Presented) The fusion protein according to claim 7, further comprising a second fusion partner that is at least one member selected from the group consisting of characterized in that an enzyme, another a protein, or a protein domain, a signal sequence and/or an affinity peptide and wherein this second fusion partner is fused to the amino terminus of the mutein of the bilin binding protein polypeptide.

20. (Previously Presented) The method of claim 15, wherein the nucleic acid coding for the wild type bilin-binding protein (SEQ ID NO: 28) also codes for a fusion partner, wherein the fusion partner is at least one member selected from the group consisting of an enzyme, a protein, a protein domain, a signal sequence and an affinity peptide and wherein the fusion partner is fused to the amino terminus of the mutein of the bilin binding protein.

21. (Previously Presented) The method of claim 15, wherein the nucleic acid coding for the wild type bilin-binding protein (SEQ ID NO: 28) also codes for a fusion partner, wherein the fusion partner is at least one member selected from the group consisting of an enzyme, a protein, a protein domain, a targeting sequence which allows the transport of the fusion protein in a specific cell compartment and an affinity peptide and wherein the fusion partner is fused to the carboxy terminus of the mutein of the bilin binding protein.